5,269,762	12/1993	Armbruster et al.	604/131
5,354,273	10/1994	Hagen	604/67

In the Claims:

Please add the following new claims:

24. A patient infusion system for use with a magnetic resonance imaging system, the patient infusion system comprising:

an infusion apparatus positioned within a room shielded from electromagnetic interference, the infusion apparatus comprising an injector adapted to accommodate at least two syringes mounted thereon for injecting fluid into a patient during a magnetic resonance imaging procedure; and

a system controller positioned external to the shielded room and in communication with the infusion apparatus for controlling the operation thereof.

25. The patient infusion system of claim 24 wherein the infusion apparatus further comprises an injector control unit positioned within the shielded room.

26. The patient infusion system of claim 25 wherein the injector control unit comprises a battery for powering the injector.

27. The patient infusion system of claim 25 wherein the injector control unit is remotely positioned from the injector.

28. The patient infusion system of claim 27 wherein the injector and the injector control unit are connected by a non-rigid drive connection.

29. The patient infusion system of claim 24 wherein the infusion apparatus and the system controller communicate with each other by means of a communication link disposed therebetween.

30. The patient infusion system of claim 29 wherein the communication link comprises a fiber optic line.

31. The patient infusion system of claim 29 wherein the communication link comprises means for transmitting and receiving electromagnetic radiation through a window in the shielded room.

32. A patient infusion system for use with a magnetic resonance imaging system, the patient infusion system comprising:

an infusion apparatus positioned within a room shielded from electromagnetic interference, the infusion apparatus comprising an injector for injecting fluid into a patient during a magnetic resonance imaging procedure and a control unit comprising a battery for powering the injector and minimizing electromagnetic interference with the magnetic resonance imaging system; and

a system controller positioned external to the shielded room and in communication with the infusion apparatus for controlling the operation thereof.

33. The patient infusion system of claim 32 wherein the battery is rechargeable.

34. The patient infusion system of claim 32 wherein the system controller comprises a battery charger for recharging batteries depleted of charge by the injector.

35. The patient infusion system of claim 32 wherein the injector and the control unit are separate units.

36. The patient infusion system of claim 35 wherein the injector and the control unit are connected by a non-rigid drive connection.

37. The patient infusion system of claim 35 wherein the control unit is remotely positioned from the injector.

38. The patient infusion system of claim 32 wherein the injector is adapted to accommodate at least two syringes mounted thereon.

39. The patient infusion system of claim 32 wherein the infusion apparatus and the system controller communicate with each other by means of a communication link disposed therebetween.

40. A method of infusing a patient with fluid during a magnetic resonance imaging procedure, the method comprising the following steps:

providing an injector adapted to accommodate at least two syringes mounted thereon for injecting fluid into a patient during a magnetic resonance imaging procedure, the injector positioned adjacent to the patient within a room shielded from electromagnetic interference;

mounting the at least two syringes on the injector;

injecting fluid contained within the at least two syringes into the patient; and

generating magnetic resonance images of the patient.

41. The method of claim 40 wherein the step of injecting comprises:

injecting fluid contained within a first syringe of the at least two syringes into the patient; and

subsequently injecting fluid contained within a second syringe of the at least two syringes into the patient.

42. The method of claim 40 wherein the fluid contained within a first syringe of the at least two syringes is different from the fluid contained within a second syringe of the at least two syringes.

43. The method of claim 40 wherein the step of injecting comprises simultaneously injecting fluid contained within the at least two syringes into the patient.

44. A method of patient infusion for use with a magnetic resonance imaging system, the method comprising the following steps:

providing an infusion apparatus positioned within a room shielded from electromagnetic interference, the infusion apparatus comprising an injector for injecting fluid into patients during magnetic resonance imaging procedures and a battery for powering the injector and minimizing electromagnetic interference with the magnetic resonance imaging system;

energizing the injector to inject fluid into one or more patients until the charge of the battery is depleted; and

replacing the depleted battery with a charged battery to energize the injector.

45. The method of claim 44, further comprising the following steps:

providing a system controller positioned external to the shielded room and in communication with the infusion apparatus for controlling the operation thereof, the system controller comprising a battery charger for charging batteries depleted of charge by the injector;

placing the depleted battery into the battery charger to charge same;

removing the charged battery from the battery charger;

placing the charged battery into the infusion apparatus; and

energizing the injector to inject fluid into patients.

46. The method of claim 45, further comprising the following steps:

charging a first battery in the battery charger;

energizing the injector to inject fluid into patients until the charge of a second battery is depleted;

removing the first battery from the battery charger and placing the first battery into the infusion apparatus;

removing the second battery from the infusion apparatus and placing the second battery into the battery charger;

re-energizing the injector to inject fluid into patients.

47. A method of patient infusion for use with a magnetic resonance imaging system, the method comprising the following steps:

providing a room shielded from electromagnetic interference;

providing a system controller positioned external to the shielded room;

providing an infusion apparatus positioned within the shielded room; and

transmitting control signals via a communication link between the system controller and the infusion apparatus.

48. The method of claim 47 wherein the communication link comprises a fiber optic line.

49. The method of claim 37 wherein the communication link comprises electromagnetic transceivers that transmit the control signals through a window in the shielded room.

Status of and Support for the Claims:

Original claims 1-23 are pending in the application.

New claims 24-49 have been added by this Preliminary Amendment. Claim 24 is supported by at least Col. 4, lines 16-19, of the specification and Figure 2 of the drawings. Claim 25 is supported by at least the original claims, Col. 4, lines 5-10, of the specification and Figure 1 of the drawings. Claim 26 is supported by at least Col. 4, lines 1-3, of the specification and Figure 1 of the drawings. Claim 27 is supported by at least the original claims, Col. 4, lines 11-13, of the specification and Figures 1-2 of the drawings. Claims 28 is supported by at least the original claims, Col. 3, lines 18-22, of the specification and Figures 1-2 of the drawings. Claim 29 is supported by at least the original claims, Col. 2, lines 55-60, of the specification and Figures 1-2 of the drawings. Claim 30 is supported by at least the original claims and Col. 3, lines 3-6, of the specification. Claim 31 is supported by at least the original claims, Col. 2, lines 66-67, through Col. 3, lines 1-3, of the specification and Figures 1-2 of the drawings.

Claim 32 is supported by at least the same disclosure provided above for claim 26. Claim 33 is supported by at least Col. 4, lines 1-3, of the specification and Figure 1 of the drawings. Claim 34 is supported by at least Col. 3, lines 42-44, of the specification and Figure 1 of the drawings. Claim 35 is supported by at least the original claims, Col. 4, lines 11-13, of the specification and Figures 1-2 of the drawings. Claim 36 is supported

by at least the same disclosure provided above for claim 28. Claim 37 is supported by at least the same disclosure provided above for claim 27. Claim 38 is supported by at least the same disclosure provided above for claim 24. Claim 39 is supported by at least the same disclosure provided above for claim 29.

Claims 40-43 are supported by at least the same disclosure provided above for claims 24 and 38. Claims 44-46 are supported by at least the same disclosure provided above for claims 26 and 32-34. Claims 47-49 are supported by at least the same disclosure provided above for claims 29-31 and 39.

Respectfully submitted,

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